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# Efficacy of Corn Seed Coated with ProShield™ Technology with Force ST® for Insect Control in Field Corn

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**Abstract**
This study was initiated in 2001 with a primary objective to look at the efficacy of seed corn coated with ProShield$^{TM}$ Technology with Force ST. ProShield$^{TM}$ is a new technology aimed at controlling corn rootworm and secondary pests by coating fungicide on the seed, prior to planting. It was our goal to look at this product as well as two granular fungicides and their effectiveness on early season stand establishment, yield, and late season root lodging. Further testing over time and locations would solidify the results of the 2001 study.

**Keywords**
Agronomy

**Disciplines**
Agricultural Science | Agriculture | Agronomy and Crop Sciences

# Efficacy of Corn Seed Coated with ProShield™ Technology with Force ST® for Insect Control in Field Corn

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## Introduction

This study was initiated in 2001 with a primary objective to look at the efficacy of seed corn coated with ProShield™ Technology with Force® ST. ProShield™ is a new technology aimed at controlling corn rootworm and secondary pests by coating fungicide on the seed, prior to planting. It was our goal to look at this product as well as two granular fungicides and their effectiveness on early season stand establishment, yield, and late season root lodging. Further testing over time and locations would solidify the results of the 2001 study.

## Materials and Methods

The experiment was conducted at the Armstrong Research and Demonstration Farm near Lewis, Iowa, in a corn–soybean–corn rotation. A randomized complete block design with four replications was planted on May 8. Plots were 60 feet long and four 30-inch rows wide. A four row John Deere 7100 series finger pickup planter was used to plant all plots. The plots were planted at 32,000 plants/acre (ppa) and were surrounded by a minimum of 12 rows of corn as a border.

A Novartis 114-day Relative Maturity (RM) hybrid, N7070Bt, was used in all plots with the ProShield™ Technology with Force® ST coated on one treatment. The other treatments were Force® 3G and Lorsban 15G applied at four and eight ounces/1,000 feet of row respectively in a T-band, as well as a control treatment. All seed was treated with Maxim® XL for seed/seedling disease protection.

Stand counts were taken at the V4 leaf stage using the Iowa State University system from each of the four rows of each plot in 8’ $8^1/_2$” lengths for a total of 34’ 10” or 1/500 acre/plot. On October 19, with a John Deere three-row plot combine, weight and moisture were measured by harvesting the middle two rows from each plot. Yield was calculated based on grain moisture of 15.5%. Data was analyzed using the GLM procedure in SAS from SAS Institute Inc. and least significant differences to separate the treatments by letter.

## Results and Discussion

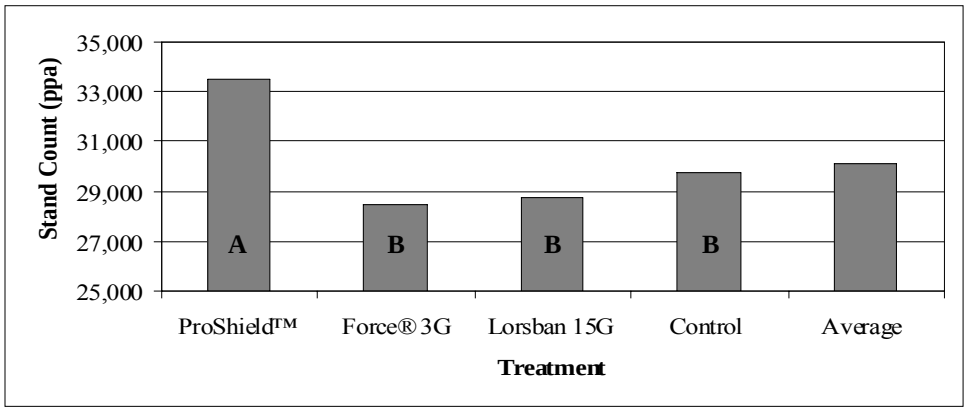
Figures 1–3 summarize effects of the insecticide treatments on early season stands, as well as on moisture and yield at harvest. Early in the 2001 season, the ProShield™-treated seed had significantly better stand counts, while the T-band applied granular insecticide treatments and the control had lesser, similar stands ($P \leq 0.05$) (Fig. 1). Yield was significantly reduced in the ProShield™ plots by about 20 bushels/acre compared with each of the other treatments ($P \leq 0.05$) (Fig. 3). There was no significant effect of treatment on harvest moisture ($P > 0.05$) (Fig. 2). The contradiction of high stand count-lower yield is unexplainable. More years and locations are needed to further address this question.

Lodging scores were attempted, but no stalks were lodged greater than 30 degrees off vertical. Early season corn rootworm pressure was thought to be low because of the high-established stand of the control, the absence of any lodging throughout the season, and the low numbers of beetles.

## Acknowledgments

We would to thank Syngenta Seeds, Inc. for providing the seed and insecticide treatments used in this study.

**Figure 1. Effect* of treatment on stand counts taken at the V4 growth stage.**




* Different letters denote significant difference between treatments (P = 0.05).

**Figure 2. Effect* of treatment on harvest grain moisture (%).**

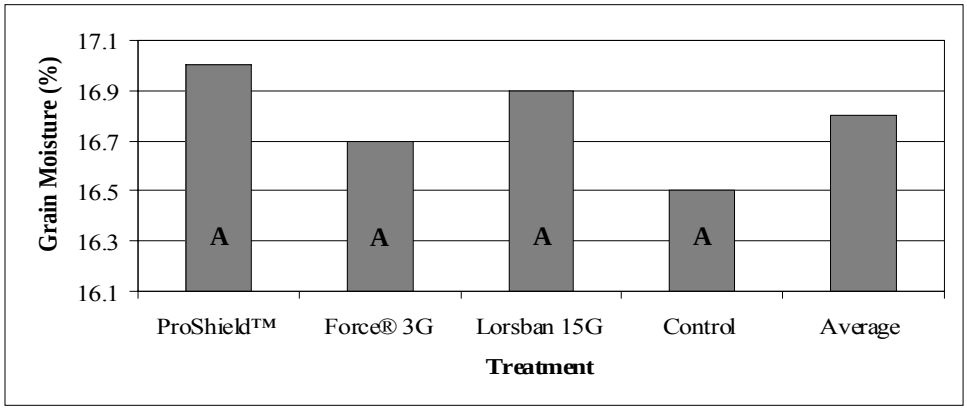



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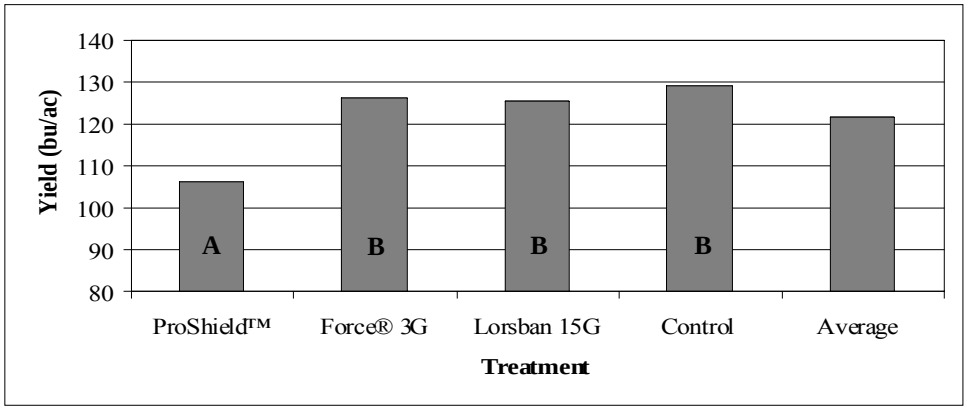
**Figure 3. Effect* of treatment on yield (bu/ac).**

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